--111. (New) A vector comprising the nucleic acid of claim 74.--

--112. (New) A vector comprising the nucleic acid of claim 75.--

--113. (New) A vector comprising the nucleic acid of claim 80.--

--114. (New) A vector comprising the nucleic acid of claim 81.--

--115. (New) A vector comprising the nucleic acid of claim 82.--

Remarks

Claims 44-72 were pending in the subject application. By this amendment, applicants have canceled claims 44-72 with prejudice or disclaimer, and added new claims 73-115 to more particularly point out and distinctly claim the invention. Accordingly, after entry of this amendment, new claims 73-115 will be pending and under consideration.

Applicants maintain that new claims 73-115 raise no issue of new matter. Support for new claims 73-79 can be found *inter alia* in the specification on page 8, lines 6-23; Figures 9, 10, 11, 12, 13, 14; and SEQ ID NOs 6, 7, 9, 10, 11, and 12. Support for new claims 80-91can be found *inter alia* in the specification on page 8, lines 24 through page 9, line 14; page 12, lines 24-27; and page 13, lines 1-17. Support for new claims 92-97 can be found *inter alia* in the specification on page 40, lines 1-3. Support for new claims 98-103 can be found *inter alia* in the specification on page 12, line 28 through page 13, line 17. Support for new claims 104-109 can be found *inter alia* in the specification on page 39, lines 12-30. Support for new claims 110-115 can be found *inter alia* in the specification on page 9, line 20 through page 11, line 13. Accordingly,

applicants respectfully request that the Examiner enter and consider each and all of claims 73-115.

Previous Rejections under 35 U.S.C. §101 and 35 U.S.C. §112, first paragraph

Previous claims 44-72 were rejected under 35 U.S.C. §101 and 35 U.S.C. §112, first paragraph as allegedly lacking utility and enablement. The Examiner asserted that the instant invention is not considered to have a specific and/or substantial utility because the specification fails to establish that the polynucleotide sequences as claimed encode a protein which is a member of the glucose transporter/sensor/receptor family as shown by structural and/or functional properties.

Applicants maintain the claimed invention has utility as a marker of hyperglycemia and diabetes, and in the diagnosis of breast cancer. Applicants note that the specification discloses that the livers and placentas of diabetic and hyperglycemic animals show a 2 to 3 fold upregulation of the expression of the claimed nucleic acids, as compared to normal animals (page 39, lines 12-30). Thus, the claimed nucleic acids have specific, credible, and substantial utility as a marker of diabetes or hyperglycemia, independently of a description of the biological activity of the nucleic acids or the polypeptides encoded by the nucleic acids; i.e. independently of GLUTx functioning as a glucose transporter. In addition, applicants further note that the specification discloses that GLUTx protein is expressed in mammary tumors but not in normal mammary tissue (page 38, line 30 through page 39, line 11). Accordingly, the subject invention also has utility for the detection of breast cancer. Applicants further note that an applicant need only provide one credible assertion of specific and substantial utility for each claimed invention to satisfy the utility requirement (MPEP 2107 II. (B) (1) (ii)).

Based on the above discussion, applicants assert that the claimed invention fulfills the requirement of 35 U.S.C. §101 as having a "specific, substantial, and credible use ..."

(MPEP 2164.07). Further, applicants maintain that the claimed invention fulfills the requirements of 35 U.S.C. §112, first paragraph, in that since the claimed invention is supported by a credible asserted utility, the skilled artisan would know how to use the claimed invention.

Previous Rejection under 35 U.S.C. §112, first paragraph

Claims 44-72 were rejected under 35 U.S.C. §112, first paragraph, for allegedly failing to meet the written description requirement of 35 U.S.C. §112, first paragraph.

Applicants assert that the pending claims are directed to nucleic acids described in the specification and to nucleic acids that hybridize under high stringency to the exemplified sequences. Nucleotide sequences are described in SEQ ID Nos. 6, 9, and 11 and in Figures 9, 11, and 13. Amino acid sequences are described in SEQ ID Nos. 7, 10, and 12 and in Figures 10, 12, and 14. Complements to the specified nucleic acid sequences are described on page 9, lines 1-14, and page 13, lines 1-17. High stringency conditions for hybridization are described in the specification on page 8, lines 27-29. Applicants also note that the pending claims directed to nucleic acids that hybridize to the exemplified nucleic acid sequences require that the encoded polypeptide have at least 85% homology with the exemplified amino acid sequences. Accordingly, applicants respectfully maintain that the claimed invention is described in the specification in sufficient detail that one skilled in the art would reasonably conclude that the inventors had possession of the claimed invention.

Conclusion

In light of the claim amendments and the above remarks, applicants respectfully request passage of all of the now pending claims, i.e. claims 73 to 115, to allowance. If there are any minor matters that would prevent allowance of the claims, applicants

request that the Examiner contact the undersigned attorney.

A check for $632.00 is enclosed to cover the following fees for a small entity: (i) $370.00 fee for filing a RCE, (ii) $207.00 fee for filing 23 claims in excess of 20 claims (23 extra claims x $9.00/extra claim = $207.00) and (iii) $55.00 fee for a one month extension of time. No additional fee is deemed necessary to maintain the pendency of the subject application. However, if there are unanticipated fees required to maintain the pendency of this application, the PTO is authorized to withdraw those fees from Deposit Account 01-1785. Overcharges may also be credited to Deposit Account 01-1785.

Respectfully submitted,

AMSTER, ROTHSTEIN & EBENSTEIN
Attorneys for Applicant
90 Park Avenue
New York, New York 10016
(212) 697-5995

Dated: New York, New York
December 12, 2002

By: _____
Craig J. Arnold
Registration No.: 34,287
Alan D. Miller
Registration No.: 42,889

AMSTER, ROTHSTEIN & EBENSTEIN

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December 12, 2002

via Express Mail

Commissioner for Patents
Washington, DC 20231

Box RCE

"Express Mail" mailing label No. EV 031302068 US
Date of Deposit: December 12, 2002
I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Commissioner for Patents, Washington, D.C. 20231.
Name: Allan D. Miller
Signature: Allan D. Miller

Re: U.S. Utility Patent Application Serial No. 09/516,493
Title: NOVEL GLUCOSE TRANSPORTER/SENSOR PROTEIN AND USES THEREOF
Inventors: Maureen J. Charron and Ellen B. Katz
Our File: 96700/613

Dear Sir:

Enclosed please find the following documents for filing with the above-identified utility patent application in the names of Maureen J. Charron and Ellen B. Katz, entitled NOVEL GLUCOSE TRANSPORTER/SENSOR PROTEIN AND USES THEREOF, comprising the following:

1. Request for Continued Examination Transmittal (1page);
2. Preliminary Amendment and Petition for a One Month Extension of Time (10 pages);
3. Check in the amount of $632.00; and
2. a Return receipt postcard.

Small entity status was previously established and is still proper.

Please acknowledge receipt of the enclosed papers by stamping the enclosed postcard and returning the same to us.

Commissioner for Patents December 12, 2002

Respectfully submitted,

AMSTER, ROTHSTEIN & EBENSTEIN
Attorneys for Applicant
90 Park Avenue
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(212) 697-5995

Dated: December 12, 2002
New York, New York

By: _____
Craig J. Arnold
Registration No.: 34,287
Alan D. Miller
Registration No.: 42,889

12-13-02

RCE/1600

PTO/SB/30 (10-01)
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REQUEST FOR CONTINUED EXAMINATION (RCE) TRANSMITTAL

Address to:
Commissioner for Patents
Box RCE
Washington, DC 20231

Application Number	09/516,493
Filing Date	March 1, 2000
First Named Inventor	Maureen J. Charron
Art Unit	1636
Examiner Name	Sumesh Kaushal, Ph.D.
Attorney Docket Number	96700/613

#16
N.G.
1/6/03

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. See Instruction Sheet for RCEs (not to be submitted to the USPTO) on page 2.

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1. Submission required under 37 CFR 1.114
   a. ☐ Previously submitted
      i. ☐ Consider the amendment(s)/reply under 37 CFR 1.116 previously filed on _____
      (Any unentered amendment(s) referred to above will be entered).
      ii. ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____
      iii. ☐ Other _____
   b. ☑ Enclosed
      i. ☑ Amendment/Reply
      ii. ☐ Affidavit(s)/Declaration(s)
      iii. ☐ Information Disclosure Statement (IDS)
      iv. ☑ Other cover letter and return receipt postcard

2. Miscellaneous
   a. ☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of _____ months. (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) **required**)
   b. ☐ Other _____

3. Fees The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.
   a. ☑ The Director is hereby authorized to charge the following fees, or credit any overpayments, to Deposit Account No. 01-1785
      i. ☐ RCE fee required under 37 CFR 1.17(e)
      ii. ☐ Extension of time fee (37 CFR 1.136 and 1.17)
      iii. ☑ Other Any required fee to preserve the pendency of the application.
   b. ☑ Check in the amount of $632.00 enclosed
   c. ☐ Payment by credit card (Form PTO-2038 enclosed)

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

Name (Print/Type)	Alan D. Miller	Registration No. (Attorney/Agent)	42,889
Signature		Date	December 12, 2002

CERTIFICATE OF MAILING OR TRANSMISSION

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as **express** mail in an envelope addressed to: Commissioner For Patents, Box RCE, Washington, DC 20231, or facsimile transmitted to the U.S. Patent and Trademark Office on the date shown below. **Express Mail No. EV 031302068 US**

Name (Print/Type)	Alan D. Miller		
Signature		Date	December 12, 2002

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